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AUTHOR Fox, Greer Litton; Inazu, Judith K.
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ABSTRACT

Family background variables such as race, religion, and gender of household head emerged as significant predictors of communication about sex in interviews conducted with a sample of mothers and teenage daughters. A suprising finding was a strong positive association between family religion and early sexual communication, although this may reflect a cautionary conservatism about children's sexual development. Mothers who were heads of households were more likely to communicate with daughters about sex than were mothers in male-headed homes. The data suggest that two of the most important predictors of frequency of current communication are the pattern of early mother-daughter communication and the quality of the relationship. Communication about sensitive topics is apparently less difficult in the adolescent years if it builds upon a general pattern of open communication. These findings support program initiatives that seek to strengthen families, and especially women in their role as mothers. (Author/CS)

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The Impact of Mother-Daughter Communication on Daughter's Sexual Knowledge, Behavior and Contraceptive Use

by

Greer Litton Fox and Judith K. Inazu

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Dr. Fox is Director of Family Research at The Merrill-Palmer Institute, 71 East Ferry Avenue, Detroit, Michigan 48202. Dr. Inazu is a Lecturer in the Department of Psychology at Eastern Michigan University, Ypsilanti, Michigan. This project was funded by Grant No. HD11224 by the Center for Population Research, NICHD/NIH/DHEW for "Mother-Daughter Communication Patterns re Sexuality." G.L. Fox is principal investigator and J.K. Inazu is assistant project director. We acknowledge with thanks the work of A. Ferguson in typing the manuscript.

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THE IMPACT OF MOTHER-DAUGHTER COMMUNICATION ON DAUGHTER'S SEXUAL KNOWLEDGE, BEHAVIOR AND CONTRACEPTIVE USE

This paper summarizes findings from a two-year project in which 449 mothers and their teenaged daughters were interviewed. As the title suggests, the focus of the project was on the mother-daughter relationship. Despite the fact that mothers are felt to be the major socializing influence on daughters as the daughters take on more fully adult female roles, surprisingly little is known about the part that mothers play in the transmission of sexual information to their daughters. The goal of this project was to investigate the influence of female parents on the sexual and contraceptive knowledge and behavior of teenage daughters.

The first part of the paper focuses on determinants of two occurrences of mother-daughter sexual communication: a) early sexual communication, which took place before the daughter was 12 1/2 years old, and b) current sexual communication which took place in the six months preceding the study interviews. The objective here will be to examine the relationship between these two occurrences of communication, early and current, as well as to examine familial, maternal and adolescent correlates of communication. The second part of the paper examines the impact of mother-daughter sexual communication in addition to the impact of family structural variables, characteristics of the mother-daughter relationship, such as openness of communication and attitudinal congruence, and the daughter's sex role and sexuality attitudes on the daughter's sexual and contraceptive knowledge and behavior. The analytic model guiding these analyses is presented in Figure 1.

According to the model, family structural variables, such as composition, socio-economic status, and race, are expected to exert a direct influence on both the attitudes of the mother and the communication pattern between mother and daughter. The heart of the model is the hypothesis that the degree of attitudinal congruence between mothers and daughters relative to sex roles and sexuality will influence their pattern of communication, and that the openness or closedness of their communication will influence the daughter's degree of effective knowledge about and behavior with regard to sex and contraception (see Fox, 1977, for elaboration).

Method

The Sample

The data for this study are drawn from interviews with 449 mothers and their 14- to 15-year-old daughters in Detroit, Michigan. The sampling frame consisted of public school registration lists maintained by the central administration of the public school system. Several public high schools were selected as sampling sites on the basis of overall socioeconomic standing and racial composition of their student bodies. Within each school student registration lists were stratified by race, sex and birth date, and sample points were drawn systematically after a random start.

Demographic, attitudinal, and behavioral data were collected from both mothers and daughters in separate but simultaneous interviews, each of which lasted about one hour. Interviewers were matched with respondents on the basis of age and race. Approximately half of the interviews were conducted at the research site, the remainder in the respondents' homes provided privacy could be assured.

The sample includes persons from a broad spectrum of racial and socioeconomic backgrounds. Fifty-six percent of the sample are black, 44 percent are white. Forty-eight percent of the mothers are currently married to and living with the daughter's father, while the remainder represent a variety of marital histories. Median family income is $19,126 per annum (1978); 21 percent have less than $9,000 per year, while 18 percent have $30,000 or more per year. Nearly one-fourth of the mothers (24 percent) did not complete high school; 43 percent received a high school diploma, and 33 percent have had some college-level course work. Just over half of the mothers (53 percent) are currently in the labor force.

Measurement of Variables

The three criterion variables we will be focusing on are the daughter's knowledge of sex and contraceptives, her sexual status, and contraceptive use if sexually experienced. Knowledge is a count of up to thirteen items answered correctly by the daughter with "probable" or "definite" assurance. Knowledge about three topic areas are covered: pregnancy risk, sex and sexual myths, and contraception. The daughter's sexual status and contraceptive use are dichotomous (never, ever) variables.

The background variables examined in this paper are race, head of household, mother's employment status, whether the daughter is the oldest living daughter, family religiosity, mother's education, mother's age, and relative income. Race (black, white), head of household (female, male), mother's employment status (employed, unemployed), and whether

the daughter is oldest or not are single-item discrete variables. Family religiosity is a composite of the extent to which families share in religious practices at home. Scores on four religious activities: reading the Bible, saying grace at mealtimes, praying together, and singing hymns were summed to create an index ranging from 4 (never) to 16 (very often). Mother's educational status was measured by number of years of school completed and her age was calculated by subtracting her year of birth from year of interview. Relative income is a measure of total family income divided by number of occupants in the household; adults were counted as one unit and children 17 years or younger as half a unit.

The daughter's attitudes towards sex roles, sexuality, birth control, and premarital permissiveness were measured by summed multiple-item indexes. Two measures of sex role orientation are used; the first is a set of fourteen items developed by Scanzoni (1975) which measures adherence to traditional sex role norms in marital and family relations; the other measure is based on ten items developed by Giordano & Cernkovich (1979) and measures propriety in female behavior, attitudes with respect to romantic relationships, and etiquette in male-female relationships. The thirteen sexuality items in the sexuality index were designed by the authors to measure attitudes towards sexual satisfaction, marital sexuality, female sexual responsiveness and sexual needs and mutuality of male-female involvement in sex. The items were scored on a five-point Likert scale from strongly agree to strongly disagree. Attitudes towards birth control is also a summed index of thirteen items developed by Fox (1974) and reflect attitudes towards convenience, sensate, and moral aspects of contraceptive use. Attitudes towards premarital permissiveness were ascertained by asking

"What is the most intimate behavior you feel is acceptable for yourself to do with a male you...date casually...strongly like but do not love... love? (1) no physical relationship, (2) kissing, (3) light petting, (4) heavy petting, (5) sexual intercourse."

One of the questions posed in this paper is whether the daughter's attitudes per se or the amount of disagreement between mother and daughter on these attitudes are better predictors of the daughter's sexual and contraceptive knowledge and behavior. Measures of attitudinal similarity on sex role, sexuality, birth control, and permissiveness were created by summing the absolute differences of the daughter's score subtracted from the mother's score for all items in the index and dividing by the number of items answered by both. These measures reflect absolute degree of disagreement (high scores indicate disagreement) rather than direction of attitudes held by each.

Quality of the mother-daughter relationship was measured from the mother's and from the daughter's viewpoint. The daughter's assessment of the relationship is based on a factor analysis of twenty-three Likert-type statements on degree of openness, trust, consistency, etc. The items comprising this index and their factor loadings are shown in Appendix A. The mother's assessment of the relationship is based on a similar set of items, also shown in Appendix A. Both indexes are scored such that high scores indicate more positive relationships.

Mother-daughter sexual communication is measured by two variables, early communication and current communication. Since the correlations between mother and daughter reports on single-item questions tend to be significant at the .01 or .001 level, and since the impact of com-

munication on the daughter is relevant only if it is perceived by the daughter, we decided to use the daughter's reports of communication rather than the mother's. Early sexual communication is a measure of how many of six sex-related topics (menstruation, dating, sexual morality, conception, sexual intercourse, and birth control) were discussed by mother and daughter by the time the daughter was twelve and one-half years old. This variable measures number of topics discussed prior to coital activity on the part of the daughter except for seven daughters who had had sex before age 12 1/2. Frequency of recent communication measures how many of four topics (dating, morality, sexual intercourse, and birth control) were discussed five or more times by mother and daughter in the six months preceding the interview.

Two sources of formal sexual education have been included in the prediction of daughter's knowledge and contraceptive use. We asked whether they ever had a class in high school where methods of contraception were discussed, and if they had ever been to a hospital or clinic for contraceptives.

Results

Talking About Sex

Mothers and daughters in our study were asked separately about the nature and extent of their discussions about menstruation, dating and boyfriends, sexual morality, conception, sexual intercourse, and birth control. The independent reports of mothers and daughters shown in Table 1 were highly consistent and suggest that nearly all mothers and daughters have discussed all six topics at some point in the girl's lifetime. "Menstruation" and "dating and boyfriends" are the topics that most of the mother-daughter pairs report ever having discussed, while "sexual intercourse" and "birth control" have been discussed by the fewest respondents (although even here over 70 percent of both mothers and daughters report that they have talked at least once about sex and birth control with their daughters or mothers). When asked at what age a topic was first introduced, the mothers and daughters agreed that menstruation and conception are introduced around ages 10 and 11 while the other four topics generally are first discussed when the daughter is 13 or 14.

The consistency in their responses in terms of frequency of discussions in the six-month period preceding the interview is also worth noting. Although interviewed simultaneously but separately, mothers and daughters differed surprisingly little both in the order and magnitude of their responses. Dating and boyfriends is the topic discussed most often with some regularity (61 percent of the daughters and 67 percent of the mothers report having discussed this five times or more in the six months preceding the survey). This is followed by discussions of men-

struation and morality, discussed frequently by about one-half of the sample; next are sexual intercourse and birth control, discussed frequently by about one-third of the sample. The least frequently and regularly discussed topic is conception; apparently once the basic points are made little additional elaboration or discussion is called for on this topic. In contrast to high levels of agreement in reporting frequency of conversations, the mothers and daughters disagreed about how comfortable they feel about talking about the sex topics with each other, and about whether they would like more discussion of the topics with each other. The mothers report being "very comfortable" talking about any of the six topics; the daughters, on the other hand, disagree. Sexual morality and intercourse seem most difficult, but in no case did even half of the daughters say they were "very comfortable" talking about a topic with their mothers. Their discomfiture is mirrored in the fact that fewer than 30 percent of the daughters expressed an interest in more discussion of any of the topics other than dating. Far more mothers than daughters wanted more discussion of sexual morality, sexual intercourse, and conception.

Predictors of Early Sexual Communication

The prediction of early mother-daughter communication about sex is shown in Table 2. The first regression analysis shown in Table 2 examines the impact of family structural variables; the second regression was conducted with mother's sex role and sexuality attitudes as predictors, and the third solution includes both sets of variables with family structural variables forced in first. The regression of number of sexual topics dis-

cussed before the daughter has reached 12 1/2 years of age on family structural variables shows that race and family religiosity are the only significant predictors. Race is by far the stronger predictor; more early sexual communication takes place in white households than in black households. Surprisingly, family religiosity is positively related to early sexual communication such that more talking tends to occur in families that share frequently in religious practices.

The second regression shown in Table 2 indicates that mother's attitudes about sex role and sexuality are predictors of amount of early sexual communication between mother and daughter. Positive attitudes about sexuality and liberal or permissive views on appropriate male/female relationships appear to facilitate early discussions about sex with her daughter. However, when family structural variables are controlled for in the third regression solution, these maternal attitudes no longer prove to be significant determinants of early sexual communication.

Predictors of Current Sexual Communication

Family structural variables, mother's and daughter's attitudes about sex roles and sexuality, mother-daughter congruence on five sets of attitudes, quality of the mother-daughter relationship as perceived by each, and amount of early sexual communication were entered as predictors of frequency of recent sexual communication. The results of this regression analysis with family structural variables forced in first are reported in the first two columns in Table 3. The only significant family structural variable among the eight tests here is sex of head of household.

Daughters with mothers who head their households are more likely to have discussed sexual topics frequently in the last six months. Mother's sex role and sexuality attitudes have very little impact on current communication although daughter's attitudes are significant. None of the derived measures of attitudinal similarity are related to frequency of recent communication either in terms of the bivariate analyses or when they are examined in conjunction with other predictor variables. The daughter's assessment of the mother-daughter relationship in terms of ease of communication, degree of trust, consistency, and so forth, is positively related to current sexual communication, but the mother's assessment of their relationship is not. Finally, early and current sexual communication are positively related; by far early communication tends to be the strongest predictor of later communication.

In previous attempts to account for predictors of current mother-daughter sexual communication we observed that girls who have had a sexual experience are more likely to have had frequent discussions with their mothers about sex. We note elsewhere (Fox and Inazu, 1979; Inazu and Fox, 1979) that discussions on sexual topics may be occurring in response to the daughter's sexual behavior. Because of the possibility that the daughter's sexual status may in some cases or for some portion of the time precipitate sexual discussions, and because the daughter's sexual status is strongly related to some of the variables which emerged as significant predictors of recent communication, another regression analysis was conducted with the daughter's sexual status included as a predictor variable. The resulting adjustment in the standardized betas, once the confounding effect of daughter's sexual status is removed, is

shown in the third column of Table 3. Aside from the almost negligible decrease in the standardized betas, there are few changes; predictor variables which were significant in the first regression continue to be significant when daughter's sexual status is controlled for. Note that the daughter's sexual status is one of the strongest predictors (standardized beta = .20, $p < .001$), and its inclusion reflects an increase in R from .38 to .42.

Consequences of Sexual Communication

Tables 4, 5, and 6 examine in detail the effects of selected aspects of mother-daughter sexual communication on the daughter's knowledge of sex and contraceptives, on her sexual status, and on her use of contraceptives is she has had sex, respectively. The tables are similar in format and are based on the daughter's report of their sexual conversations.

A series of one-way analysis of variance tests were conducted with selected aspects of mother-daughter sexual communication as independent variables and daughter's level of sexual and contraceptive knowledge as the criterion variable. As shown in Table 4, ever having discussed sexual topics, discussing sex early rather than later, having more rather than less frequent current discussions, and daughter-or mutually-initiated discussions on several of these topics are significantly related to higher knowledge. Degree of comfort and whether more discussion was wanted were not significantly related to daughter's knowledge, although there is a consistent positive relationship between comfortableness and knowledge across all topics.

As can be seen in Table 5, there are few significant differences in terms of whether each topic was ever discussed on the girl's sexual status.

On the topic of birth control, girls who have talked with their mothers are more likely to have had a sexual episode, and a similar trend is observed on the topic of sexual intercourse. Again, these results may suggest that discussions are responses to the girl's sexual behavior rather than contributors to it. Frequency of recent communication also demonstrates this inverse relationship; that is, more talking is associated with a larger percentage sexually experienced. Age at which each topic was first discussed and who iniates sex-related conversations are not significantly related to sexual status. The daughter's reports of how comfortable she feels discussing three of the topics with her mother--dating and boyfriends, sexual morality, and sexual intercourse--also appear to be a reaction to her sexual status. That is, girls who are very uncomfortable discussing these topics are more likely to be sexually experienced than girls who are very or fairly comfortable discussing these topics. Similarly, girls who want less discussion on four of the topics are more likely to be sexually experienced than girls who want either more or the same amount of discussions. It may be that these topics are uncomfortable to discuss because of their feelings of guilt, because of their anxiety that their mothers may discover that they are sexually experienced, or if their mothers already know or suspect, the conversations themselves could be unpleasant.

The impact of communication on whether or not the daughter has ever used contraceptives (for sexually experienced girls) is shown in Table 6. Although very few of the results are significant, some trends are noticeable. It appears, for example, that girls who have discussed sexual topics, and girls who are very or fairly comfortable discussing these topics are slightly more likely to have ever used contraceptives. No systematic trends are evident for the remaining communication variables.

Tables 7, 8, and 9 show the results of regressing daughter's sexual and contraceptive knowledge, her sexual status, and her contraceptive use on background characteristics and social-psychological variables. For this presentation we were particularly concerned with assessing the utility of incorporating mother-daughter communication and relationship variables in the prediction of teenaged sexual and contraceptive knowledge and behavior. For this purpose, we examined three aspects of the mother-daughter relationship: positiveness of the relationship as reported by each participant, degree of attitudinal similarity on five different sets of attitudes and early and current sexual communication. Their impact is examined in relation to background variables which were entered in the equation first in stepwise fashion and in relation to the daughter's sexual attitudes and behavior which were also entered in stepwise. For presentation purposes, the order in which variables entered the equation are not shown except in the case of background variables.

The bivariate and multivariate outcomes of predicting daughter's knowledge are shown in Table 7. Although race and two indicators of social class, mother's education and relative income, are significantly related to daughter's knowledge in bivariate analyses, their effects are nonsignificant when social-psychological factors are taken into account. The strongest predictors by far are measures of the daughter's attitudes. Her sex role norms, birth control attitudes and sexuality attitudes are positively and significantly related to knowledge of sex and contraceptives, controlling for all other factors. Paradoxically, however, actual experience with sex or with contraceptives is not related to the acquisition of

knowledge on these matters.

In terms of the contribution of mother-daughter relationship variables to the prediction of daughter's knowledge, we see that two of the mother-daughter variables are significant. Although we expected greater attitudinal similarity to be associated with greater knowledge on the daughter's part, this expectation is confirmed only with regard to premarital permissiveness standards. Sharing similar views on premarital sexuality standards facilitates the acquisition of sexual and contraceptive knowledge, although similarity of views on sex role and sexuality attitudes do not relate to daughter's knowledge. A second mode through which mothers can influence their daughter's knowledge is through early sexual communication. Among the four sources of formal (i.e., school and clinic) and informal (i.e., parental) sexual instruction examined here, the only significant contributor to daughter's knowledge is the occurrence of discussions about sex between a mother and her daughter prior to the daughter's teenage years.

Table 8 shows the results of a similar analysis with daughter's sexual status (virgin or nonvirgin) as the criterion variable. As with knowledge, the prediction of sexual status is not so strongly determined by background factors as it is by characteristics of the mother-daughter relationship and by the daughter's attitudes. Race is the only background variable associated with virginity status such that black teenaged girls are more likely to be sexually experienced than white teenaged girls.

Three of the significant predictors, daughter's assessment of the mother-daughter relationship, similar attitudes on premarital permissiveness, and frequency of recent sexual communication between mother and

daughter, measure different aspects of the mother's involvement in her daughter's life. These findings indicate that daughters who report less positive mother-daughter relationships, daughters who disagree with premarital permissiveness standards of their mothers, and daughters who have discussed sexual topics often in the recent past are more likely to be sexually experienced.

These findings, however, must be viewed with some degree of caution, since in none of these cases can we assert unequivocably that the causal link between mother's involvement and daughter's sexual behavior is in one direction only and flows only from the mother to the daughter. Rather, we think it is just as reasonable to expect that the daughter's sexual behavior also influences the nature of the mother's involvement. The problem of determining direction of causality is expecially critical in interpreting the relationship between frequency of recent communication and daughter's sexual status. While the positive association between sexual behavior and recent discussions about sex could suggest that mother-daughter discussion encourages sexual activity on the part of the daughter, we suggest that the alternative interpretation that the girl's sexual activity precipitates the mother-daughter discussions is the more likely (cf. Inazu and Fox, 1979).[1] The direction of causality is also problematic in the association between the daughter's assessment of the mother-daughter relationship and the daughter's sexual status. Although here we hypothesize that the absence of a close, secure mother-daughter relationship is antecedent to daughter's sexual initiation, it is also reasonable to expect that quality of the mother-daugher relationship is negatively affected by the daughter's sexual activity. Cross-sectional

data do not allow us to separate the time order between these two variables.[2]

Other predictors of sexual activity among the girls in our sample are her premarital permissiveness attitudes and her attitudes regarding appropriate gender behavior. It is not surprising to find that premarital attitudes and premarital behavior are positively related, although here again the usual caveats regarding direction of causality should be noted. It is somewhat more surprising to find that girls with nontraditional attitudes about gender appropriate behavior are less likely to be sexually experienced. Although some researchers have found that sexually active girls have less traditional values (Fox, 1977a; Jessor and Jessor, 1975) our study supports findings from Cvetkovich and Grote (1965) who also found that nonvirgin girls tend to hold traditional sex role attitudes.

The final dependent variable examined here is contraceptive use among nonvirgin girls. As shown in Table 9, the daughter's attitudes regarding birth control, extent of her sexual activity, and having received sexual instruction in formal settings (in school or in a clinic) are positively related to her use of contraceptives. Neither background factors, quality of the mother-daughter relationship, attitudinal congruence, nor extent of sexual communication are significantly related to contraceptive use. It is critical to note that measures of the daughter's characteristics, such as her knowledge about sex and contraceptives and her sex role and sexuality attitudes approach significance but are eliminated when other factors are entered as controls.

Summary and Conclusions

In this paper we have presented a cursory summary of our findings on the impact of mothers on their teenaged daughter's sexual and contraceptive knowledge and behavior, focusing particularly on the role of mother-daughter sexual communication. First we examined predictors and correlates of early and current sexual communication; then we examined the impact of communication patterns on the daughter's knowledge and behavior with regard to sex and contraceptives.

Before proceeding with a summary and discussion of the findings, we would like to mention two analytic problems that have confronted us throughout this project. The first is the problem of causality. We have found repeatedly that the kind of conclusive statements we had hoped to make have had to be qualified because of the difficulty of determining causal direction among several of our major variables. The unitemporal, cross-sectional data collection strategy used in this study has been limiting in that respect, although in some cases time order could be established by resorting to retrospective methods. The problem lies only partially in cross-sectional research designs. Another part of the problem is that the behavior we are examining is highly complex. The mothers and daughters in this study are clearly enmeshed in long-standing relationships of subtle intricacy, which is difficult to capture with simplistic causal models and relatively insensitive survey instruments.

A second problem we encountered concerns the utilization of data from both parties in a relationship and devising methods for incorporating both reports or reconciling incongruent reports. We dealt with these problems in a number of ways. In some instances both inputs are used to

create a new variable, as with the measures of attitudinal similarity; in other instances each report was used separately in the same analysis. In still other instances, depending on the reliability between mother and daughter reports, and if there was theoretical justification for doing so, only one person's report was used, as in the use of the daughter's report of early and current communication.

What can we now conclude about who talks to their children about sex, under what familial conditions sexual communication is likely to occur, and about the effects of such communication? Family background variables such as race, religiosity, and sex of household head emerged as significant predictors of sexual communication between mothers and daughters. Early communication about sex is more common in white families, but race is not a significant predictor of later sexual co nmunication. Family religiosity similarly predicts toward early but not to recent communication. We should note that the measure of family religiosity assesses the frequency of fairly conservative, family-based religious practices (singing hymns, Bible reading, family prayers, and saying grace). We were surprised, frankly, to find a strong positive association between this measure and early sexual communication. However, since the topics that were most likely to have been discussed earl in the girl's life were educational (conception, menstruation) and hortatory (sexual morality) in focus, it may be that this association reflects a precautionary conservatism about one's children's sexual development, which in these data manifests itself in early and frequent transmission of information and proscriptive messages about the "facts of life." Finally, sex of household head emerged as a significant predictor of current communica-

tion; as did Akpom, Akpom, and Davis (1976) we found that mothers who were heads of the household were more likely to talk frequently with daughters about sex than mothers in male-headed homes.[3]

Contrary to our initial expectations, we found that how mothers feel about themselves as sexual beings, their attitudes about birth control, and their sex role orientation were not predictors of either early or current sexual communication. The daughter's attitudes, however, were significant in the prediction of recent sexual communication. At the same time, however, it is necessary to keep in mind that the relationship between mother's and daughter's attitude formation and expression, communication frequency, and attitude reformation most likely is a dynamic reciprocity rather than a one-way flow. It is simply difficult to depict with cross-sectional data that mothers and daughters influence each other; that one's behavior influences the other's attitudes; that the other's attitudes influence not only her own behavior but also that of the other; and so on throughout a complicated series of reciprocal causal chains and feedback loops.

Finally, and we think most significantly, the data suggest that two of the most important predictors of frequency of current communication are the pattern of early mother-daughter talking and the quality of the mother-daughter relationship. Apparently, communication about sensitive topics such as sex is less difficult in the middle teenage years if it follows and builds upon a more general pattern of open communication in the mother-daughter relationship. This is true for virgins no less than for nonvirgins and underlies our interpretation that only part of the pattern of recent sexual communication is a response to the sexual activity of the

daughters.

We have examined in detail the impact of selected aspects of communication, e.g., comfortableness, who initiates conversations, on the daughter's knowledge of sex and contraceptives, her sexual status (virgin, nonvirgin) and her contraceptive use if sexually experienced (never, ever). By far mother-daughter sexual communication has its greatest impact on knowledge. Early sexual communication, current sexual communication and daughter- or mutually-initiated conversations were associated with more knowledge on the daughter's part in bivariate analyses. When mother-daughter sexual communication is considered with other predictors in the multiple regression analyses, early mother-daughter communication is the only source of sexual instruction relating significantly to knowledge; formal sources of instruction were not significant predictors.

We expected that higher frequency of recent talking would be associated with less likelihood of sexual intercourse, but just the opposite was found. In the results we suggest that in part recent talking may be a response to the daughter's sexual activity. That is, some mothers may become more rather than less involved in the sexual education and socialization of their teenage daughter when it is of importance to do so, i.e., when the daughter becomes sexually active. This lends support to Reiss' (1973, 1974) thesis of increased maternal involvement and conflicts with Bernard's (1975) thesis of maternal withdrawal and passivity as responses to the daughter's sexual experimentation.

Aside from the impact of patterns of mother-daughter sexual communication, other aspects of maternal involvement tend also to have a favorable effect on the daughter's sexual behavior and knowledge of sex and con-

traceptives. Sexually experienced girls report less positive relationships and more disagreement with their mothers about premarital permissiveness; more knowledgeable girls tended to agree with their mothers about standards of premarital permissiveness. These findings reiterate the importance of maternal involvement in affecting the daughter's sex and contraceptive knowledge and sexual behavior, not so much in terms of the sexual information she imparts but in terms of the kind of socio-emotional support she provides for her daughter.

Maternal involvement is less critical in affecting contraceptive use among sexually experienced teenage girls. Overall, there were few significant predictors of contraceptive use. Sexual instruction from informal sources, i.e., mother-daughter sexual communication, does not appear to influence contraceptive use, but sexual instruction in school or at a clinic tends to promote contraceptive use. Furthermore, the daughter's knowledge about sex and contraception is not so important as her attitudes towards contraception in influencing usage. Indeed, contraceptive use appears in these data to be a function of positive attitudes, contraceptive availability, and extensive sexual experience, which approximates closely the classic KAP model.

In sum, these data suggest that emphasis on formal sources of contraception education and availability for teens may not be misplaced, when the desired outcome is contraceptive use among these teens who are most sexually active. At the same time, however, because the quality of the mother-daughter relationship emerged as so significant a factor in both the daughter's knowledgeableness about sex and in her sexual behavior,

the data presented herein would also support those program initiatives that undergird and strengthen families, and especially women in their roles as mothers.

FOOTNOTES

[1] In a separate analysis we specified the time order of events such that the daughter's sexual behavior preceded recent mother-daughter sexual discussions by restricting the analysis to virgins and only those nonvirgins whose sexual initiation had occurred prior to the six months preceding the interview and thus whose sexual initiation could not have been brought about by recent mother-daughter sexual discussions. In this analysis, we found that the sexually experienced girls had talked more frequently about sex with their mothers during the six months preceding the interview than had the girls who were still virgins. This result is consistent with our interpretation of the recent mother-daughter discussions as evidence of the mother's response to her daughter's sexual behavior (see also Fox and Inazu, 1979).

[2] A series of two-way ANOVA's on mother's and daughter's levels of overall satisfaction with their relationship suggested significant main effects of daughter's sexual status for both mothers and daughters, but the mother's knowledge of her daughter's sexual activity had a significant negative effect only on the mother's level of satisfaction. These analyses cannot illuminate the cause-effect relationship between daughter's sexual behavior and her assessment of relational quality, but the fact that mothers of nonvirgins who knew about their daughter's sexual activity felt less positively toward their daughters than mothers of nonvirgins who are naive about their daughter's sexual activity suggests that the more negative assessments of the knowledgeable mothers may be a response to rather than an antecedent of the daughter's sexual behavior.

FOOTNOTES (cont'd)

[3] Akpom, Akpom, and Davis (1976) suggest that communication may be easier when the head of household is female. However, we failed to find significant differences between mothers and daughters from female-headed as compared to other-headed households in terms of the degree of comfortableness they felt in discussions of sexual topics with each other.

[4] In an earlier paper we found that the daughter's assessment of the quality of the mother-daughter relationship (MDREL) was a significant predictor of the daughter's attitudes and predispositions toward birth control (Fox and Inazu, 1979). This would suggest that mothers may influence contraceptive use indirectly through their influence on the daughter's contraceptive attitudes.

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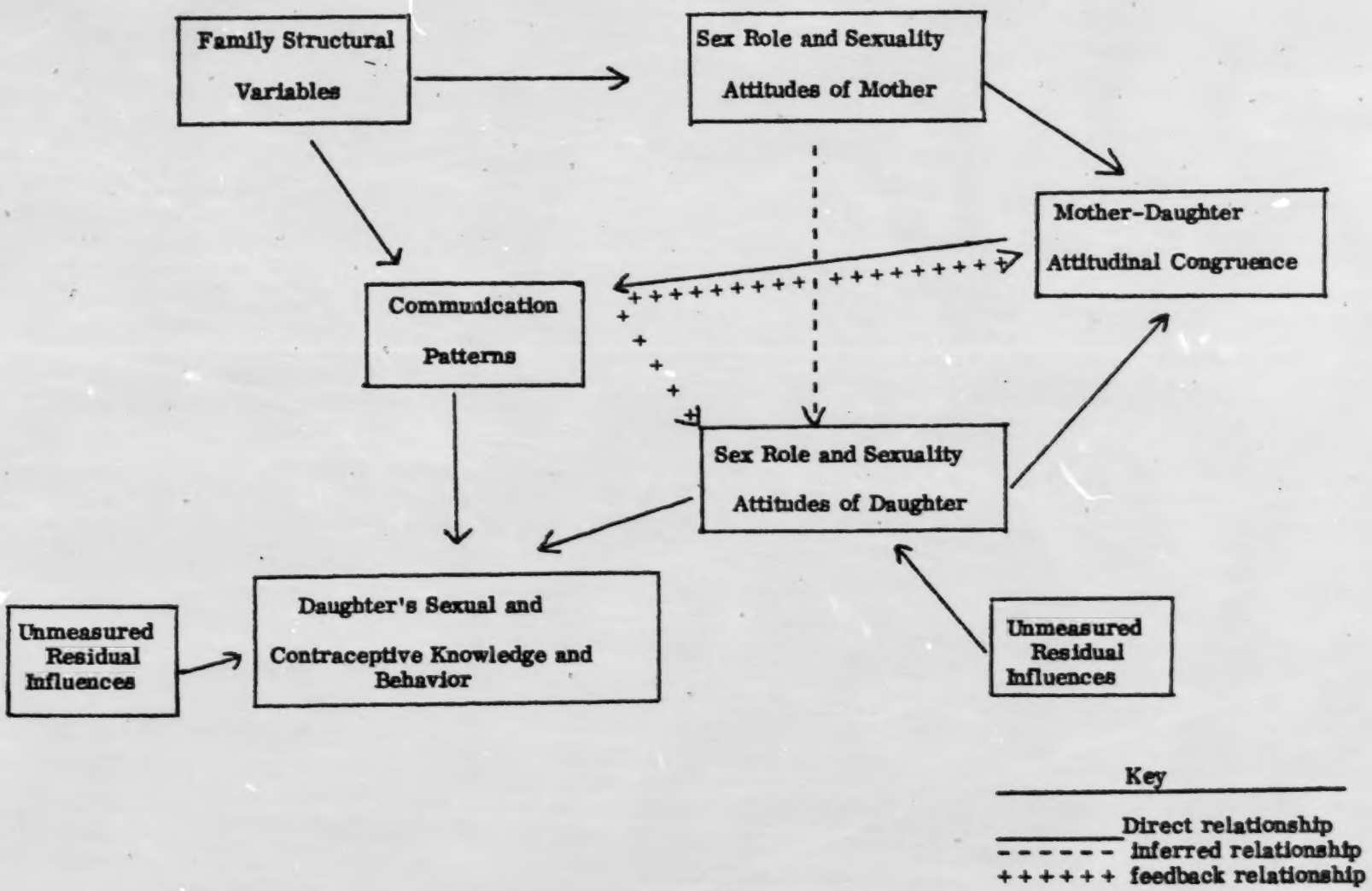

Figure 1. Model of the Impact of Mother-Daughter Communication Patterns on the Sexual and Contraceptive Knowledge and Behavior of Daughters

TABLE 1. Patterns of communication by mothers' and daughters' reports.

N: 449	Menstruation		Dating and Boyfriends		Morality		How Babies Are Made		Sexual Intercourse		Birth Control	
	M	D	M	D	M	D	M	D	M	D	M	D
Percent Ever Talked	98	93	97	90	92	78	86	81	81	70	75	70
Age First Talked, Median	10	12	13	13	12	13	11	12	13	13	14	14
Percent Who Talked 5 + Times in Last 6 Months	50	46	67	61	51	45	18	20	30	36	30	33
Who Initiates												
Both	19	14	21	11	33	14	22	11	20	15	20	14
Mother	35	39	29	30	46	63	34	53	55	65	57	57
Daughter	46	47	50	59	22	23	44	36	24	20	23	29
How Comfortable												
Very	88	45	83	36	71	20	75	46	61	19	76	38
Fairly	11	37	14	49	23	53	20	43	27	50	20	49
Not very	1	7	3	12	4	19	4	8	10	23	3	9
Not at all	-	4	1	3	2	8	2	3	2	8	1	4
Want More Discussion	13	11	37	36	40	23	29	16	40	19	34	29

Table 2. Regression of Early Sexual Communication (TALK12) on Family Structural Variables and Mother's Sex-Role and Sexuality Attitudes Conducted Separately and Simultaneously (N = 445).

Family Structural Variables (entered alone)	Zero-order	Stand. Beta
Race [a]	.18	.22***
Family Religiosity	.08	.13**
Mother's Education	.09	.08
Mother's Age	-.04	-.05
Mother's Employment Status [b]	-.06	-.05
Oldest Daughter [c]	.07	.04
Female Headship [d]	.06	.03
Relative Income	.07	.00
Multiple R =	.26	
Mother's Attitudes (entered alone)		
Sexuality	.16	.11*
Proper Sex-Role Behavior	.16	.12*
Birth Control	.14	.09
Sex-Role Ideology	.08	-.06
Permissiveness	.10	.05
Multiple R =	.22	
Mother's Attitudes (with background variables entered as controls)		
Sexuality	.16	.09
Birth Control	.14	.10
Permissiveness	.10	.05
Proper Sex-Role Behavior	.16	.06
Sex-Role Ideology	.08	-.06
Multiple R =	.31	

*p < .05
**p < .01
***p < .001

[a] 1 = black, 2 = white
[b] 1 = employed, 2 = not employed
[c] 0 = not oldest daughter, 1 = oldest daughter
[d] 1 = female-headed, 2 = other

Table 3. Regressions of Frequency of Recent Sexual Communication on Family Structural Variables, Mother's Attitudes, Daughter's Attitudes, Mother-Daughter Attitudinal Congruence, Quality of Mother-Daughter Relationship, and Early Sexual Communication, with and without Daughter's Virginity Status (N = 438).

	SEXTALK5		
	Zero-Order	Stand. Beta	Stand. Beta
Family Structural Variables (entered first)			
Female Headship	-.11	-.13**	-.11*
Mother's Education	-.06	-.06	-.06
Race [a]	.03	-.00	.02
Mother's Age	-.03	-.01	-.00
Family Religiosity	.02	-.02	-.01
Mother's Employment Status [b]	-.01	-.00	.01
Oldest Daughter [c]	.02	-.01	-.02
Relative Income	.04	.02	.02
Mother's Attitudes			
Birth Control	.00	-.05	-.03
Permissiveness	.00	-.03	-.03
Sex-Role Ideology	-.03	.02	.02
Proper Sex-Role Behavior	.00	.01	-.01
Sexuality	.03	-.00	-.00
Daughter's Attitudes			
Sexuality	.16	.16**	.14*
Sex-Role Ideology	-.09	-.15*	-.14*
Birth Control	.08	.10	.07
Proper Sex-Role Behavior	-.04	-.02	.01
Permissiveness	-.01	-.01	-.03
Mother-Daughter Attitudinal Similarity			
Proper Sex-Role Behavior	.04	.04	.04
Birth Control	-.04	-.05	-.07
Sexuality	-.04	.04	.05
Permissiveness	-.04	-.03	-.06
Sex-Role Ideology	.05	.01	.02
Mother-Daughter Relationship			
Daughter's Assessment	.13	.12*	.15**
Mother's Assessment	.07	.02	.03
Early Sexual Communication	.25	.24***	.23***
Daughter's Virginity Status [e]	.17	ff	.20***
Multiple R =	.38		.42

*p < .05
**p < .01
***p < .001

a, b, c, d
See Table 2 for footnotes.

[e] 1 = virgin, 2 = nonvirgin
ff not included in this regression analysis.

Table 4. Daughter's Sexual and Contraceptive Knowledge by Selected Aspects of Mother-Daughter Sexual Communication on Six Topics (one-way ANOVA's).

	Daughter's Knowledge											
Daughter's Report	MENSTRUATION		DATING & BOY FRIENDS		MORALITY		HOW BABIES ARE MADE		SEXUAL INTERCOURSE		BIRTH CONTROL	
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Ever Talked												
Yes	6.5*	(419)	6.5*	(405)	6.5	(349)	6.6*	(360)	6.7**	(314)	6.6**	(314)
No	5.5	(29)	5.7	(43)	6.2	(98)	6.0	(86)	5.9	(133)	6.0	(134)
Age First Talked												
≤10	7.1**	(105)	7.5*	(47)	7.4*	(52)	7.3***	(132)	8.2***	(52)	7.5	(23)
11	6.9	(98)	6.9	(32)	6.2	(32)	6.9	(43)	6.5	(18)	7.1	(15)
12	6.2	(106)	6.5	(96)	6.4	(65)	5.9	(73)	6.3	(49)	6.6	(34)
≥13	5.9	(103)	6.3	(202)	6.3	(172)	5.8	(80)	6.4	(172)	6.5	(222)
Frequency of Recent Communication												
0 Times	6.1	(109)	6.0	(70)	6.2	(130)	6.6	(253)	6.1*	(179)	6.1*	(182)
1-4	6.4	(148)	6.3	(131)	6.4	(160)	6.2	(125)	6.7	(157)	6.6	(162)
≥5	6.7	(191)	6.6	(245)	6.8	(158)	6.2	(70)	6.7	(112)	6.9	(104)
Who Initiates												
Daughter	6.7	(194)	6.7*	(236)	6.7	(80)	6.7	(125)	7.2	(62)	7.2*	(91)
Mother	6.3	(161)	6.1	(120)	6.4	(217)	6.4	(182)	6.5	(202)	6.4	(178)
Both	6.6	(59)	6.8	(44)	6.9	(49)	6.8	(36)	6.8	(46)	6.5	(43)
How Comfortable												
Very	6.8	(203)	6.7	(145)	7.0	(70)	6.8	(167)	6.8	(61)	6.8	(120)
Fairly	6.2	(168)	6.5	(200)	6.4	(185)	6.4	(156)	6.7	(157)	6.6	(153)
Not Very	6.4	(49)	6.2	(60)	6.4	(96)	6.4	(38)	6.5	(98)	6.1	(41)
Want More Discussion												
More	6.5	(45)	6.6	(144)	6.3	(81)	6.5	(57)	6.5	(59)	6.9**	(90)
Less	6.2	(87)	5.9	(62)	6.3	(86)	6.1	(52)	6.3	(79)	5.6	(57)
Same	6.6	(288)	6.7	(199)	6.7	(184)	6.7	(253)	6.9	(178)	6.8	(167)

*p <.05
**p <.01
***p <.001

Table 5. Percent Daughters Sexually Experienced by Selected Aspects of Mother-Daughter Communication on Six Topics.

Daughter's Report	Percent Sexually Experienced											
	MENSTRUATION		DATING & BOY FRIENDS		MORALITY		HOW BABIES ARE MADE		SEXUAL INTERCOURSE		BIRTH CONTROL	
	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N
Ever Talked												
Yes	32	(419)	32	(405)	32	(349)	32	(360)	34	(314)	35*	(314)
No	34	(29)	30	(43)	31	(98)	33	(86)	28	(133)	25	(134)
Age First Talked												
≤10	31	(105)	36	(47)	31	(52)	26	(132)	25	(52)	22	(23)
11	26	(98)	28	(32)	38	(32)	40	(43)	28	(18)	13	(15)
12	35	(106)	26	(96)	32	(65)	33	(73)	31	(49)	35	(34)
≥13	33	(103)	36	(202)	35	(172)	40	(80)	40	(172)	40	(222)
Frequency of Recent Communication												
0 Times	30	(107)	35**	(68)	30*	(128)	32	(250)	27**	(177)	24**	(181)
1-4	36	(148)	21	(131)	25	(160)	31	(125)	27	(157)	34	(162)
≥5	30	(191)	37	(245)	40	(158)	34	(70)	45	(112)	41	(104)
Who Initiates												
Daughter	28	(194)	32	(236)	25	(80)	26	(125)	24	(62)	34	(91)
Mother	37	(161)	31	(120)	36	(217)	37	(182)	37	(202)	35	(178)
Both	25	(59)	39	(44)	29	(49)	31	(36)	28	(46)	37	(43)
How Comfortable												
Very	31	(203)	23***	(145)	29***	(70)	33	(167)	20*	(61)	30	(120)
Fairly	31	(168)	32	(200)	25	(185)	30	(156)	36	(157)	37	(153)
Not Very	39	(49)	55	(60)	49	(96)	37	(38)	39	(98)	44	(41)
Want More Discussion												
More	22**	(45)	35	(144)	37*	(81)	26	(57)	27*	(59)	39*	(90)
Less	45	(87)	32	(62)	42	(86)	38	(52)	46	(79)	46	(57)
Same	30	(288)	30	(199)	26	(184)	32	(253)	30	(178)	29	(167)

*p<.05
**p<.01
***p<.001

Table 6. Percent Daughters Who Have Ever Used a Contraceptive by Selected Aspects of Mother-Daughter Sexual Communication on Six Topics (nonvirgins only).

	Percent Ever Used Contraceptives											
	MENSTURA-TION		DATING AND BOYFRIENDS		MORAL-ITY		HOW BABIES ARE MADE		SEXUAL IN-TERCOURSE		BIRTH CONTROL	
Daughter's Report	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N
Ever Talked												
Yes	55	(133)	58	(130)	59	(113)	55	(116)	58	(107)	60	(111)
No	60	(10)	38	(13)	43	(30)	57	(28)	49	(37)	42	(33)
Age First Talked												
≤10	42	(33)	47	(17)	38*	(16)	57	(35)	38	(13)	60	(5)
11	58	(26)	56	(9)	33	(12)	59	(17)	80	(5)	50	(2)
12	62	(37)	60	(25)	67	(21)	62	(24)	67	(15)	58	(12)
≥13	56	(34)	59	(73)	65	(60)	50	(32)	60	(68)	61	(89)
Frequency of Recent Communication												
0 Times	53	(32)	46	(24)	41	(39)	57	(79)	50	(48)	43	(44)
1-4	58	(53)	46	(28)	62	(40)	62	(39)	60	(43)	66	(55)
≥5	54	(57)	61	(90)	59	(63)	42	(24)	56	(50)	56	(43)
Who Initiates												
Daughter	58	(55)	56	(75)	60	(20)	50	(32)	60	(15)	68	(31)
Mother	52	(60)	57	(37)	58	(78)	57	(67)	55	(74)	54	(63)
Both	60	(15)	65	(17)	64	(14)	46	(11)	69	(13)	69	(16)
How Comfortable												
Very	54	(63)	68	(34)	65	(20)	60	(55)	42	(12)	81**	(36)
Fairly	62	(52)	57	(63)	61	(46)	56	(46)	68	(56)	50	(56)
Not Very	42	(19)	48	(33)	53	(47)	36	(14)	50	(38)	50	(18)
Want More Discussion												
More	70	(10)	54	(50)	70	(30)	40	(15)	50	(16)	57	(35)
Less	46	(39)	55	(20)	56	(36)	60	(20)	50	(36)	46	(26)
Same	58	(85)	62	(60)	53	(47)	58	(80)	67	(54)	69	(49)

*p<.05
**p<.01

Table 7. REGRESSION OF DAUGHTER'S SEXUAL AND CONTRACEPTIVE KNOWLEDGE ON FAMILY STRUCTURAL VARIABLES, CHARACTERISTICS OF THE MOTHER-DAUGHTER RELATIONSHIP, SOURCES OF SEXUAL INFORMATION, AND DAUGHTER'S CHARACTERISTICS (N = 438).

	Daughter's Knowledge	
	Zero-order	Stand. Beta
Family Structural Variables (entered first)		
Mother's Education	.13	.05
Race [a]	.12	.02
Mother's Age	.09	.07
Mother's Employment Status [b]	-.09	.02
Family Religiosity	-.08	-.06
Relative Income	.11	-.02
Oldest Daughter [c]	-.06	-.07
Female Headship [d]	.06	.02
Quality of Mother-Daughter Relationship		
Mother's Assessment	-.03	-.08
Daughter's Assessment	.11	.01
Mother-Daughter Attitudinal Similarity		
Permissiveness	-.08	-.15**
Sex Role Norms	-.02	.06
Birth Control	-.20	-.06
Proper Sex Role Behavior	-.02	-.03
Sexuality	-.03	.02
Sources of Sexual Information		
Early Mother-Daughter Communication	.21	.09*
Recent Mother-Daughter Communication	.10	.06
Sex Education in School [e]	.09	.06
Clinic Attendance [f]	.05	.07
Mother's Knowledge	.21	.08
Daughter's Attitudes		
Sex Role Norms	.47	.35***
Birth Control	.41	.21***
Sexuality	.16	.14**
Permissiveness	.12	.04
Proper Sex Role Behavior	.25	-.00
Daughter's Sexual Characteristics		
Virginity Status [g]	.01	.03
Contraceptive Use [h]	.06	-.01
Multiple R = .62		

*p<.05
**p<.01
***p<.001

[a] 1 = black, 2 = white
[b] 1 = employed, 2 = unemployed
[c] 0 = not oldest daughter, 1 = oldest daughter
[d] 1 = female, 2 = other
[e] 1 = no, 2 = yes
[f] 1 = no, 2 = yes
[g] 1 = virgin, 2 = nonvirgin
[h] 1 = never used, 2 = ever used

Table 8. REGRESSION OF DAUGHTER'S SEXUAL STATUS ON FAMILY STRUCTURAL VARIABLES, CHARACTERISTICS OF THE MOTHER-DAUGHTER RELATIONSHIP, SEXUAL COMMUNICATION AND DAUGHTER'S CHARACTERISTICS (N = 442).

	Daughter's Sexual Status [g]	
	Zero-order	Stand. Beta
Family Structural Variables (entered first)		
Race [a]	-.18	-.13**
Female Headship [d]	-.16	-.07
Family Religiosity	-.07	-.08
Mother's Education	-.06	-.01
Mother's Age	-.09	-.07
Oldest Daughter [c]	.05	.03
Relative Income	-.07	-.03
Mother's Employment Status [b]	-.00	-.05
Quality of Mother-Daughter Relationship		
Daughter's Assessment	-.28	-.16***
Mother's Assessment	-.17	-.05
Mother-Daughter Attitudinal Similarity		
Permissiveness	.28	.10*
Birth Control	.03	.07
Sexuality	-.08	-.04
Sex Role Norms	.02	-.02
Proper Sex Role Behavior	.02	.01
Mother-Daughter Sexual Communication		
Frequency of Recent Communication	.17	.16***
Number Discussed Before Age 12 1/2	-.04	-.04
Daughter's Attitudes		
Permissiveness	.34	.22***
Proper Sex Role Behavior	-.15	-.13
Sexuality	.20	.07
Birth Control	.04	.07
Sex Role Norms	-.12	-.07
Daughter's Sexual Characteristics		
Knowledge	.01	.05

Multiple R = .54

*p<.05
**p<.01
***p<.001

See a, b, c, d, g on Table 7

Table 9. REGRESSION OF DAUGHTER'S CONTRACEPTIVE USE ON FAMILY STRUCTURAL VARIABLES, CHARACTERISTICS OF THE MOTHER-DAUGHTER RELATIONSHIP, SOURCES OF SEXUAL INFORMATION, AND DAUGHTER'S CHARACTERISTICS, NONVIRGINS ONLY (N = 142).

	Daughter's Contraceptive Use [h]	
	Zero-order	Stand. Beta
Family Structural Variables (entered first)		
Oldest Daughter [c]	.10	-.05
Mother's Education	.10	.12
Female Headship [d]	-.04	-.01
Race [a]	.03	.04
Mother's Age	-.07	-.11
Family Religiosity	.00	.09
Relative Income	.04	-.06
Mother's Employment Status [b]	-.03	.09
Quality of Mother-Daughter Relationship		
Mother's Assessment	-.09	-.09
Daughter's Assessment	-.00	.03
Mother-Daughter Attitudinal Similarity		
Proper Sex Role Behavior	.08	.13
Birth Control	.06	.12
Sexuality	.08	-.09
Sex Role Norms	.04	-.04
Permissiveness	.08	.02
Sources of Sexual Information		
Early Mother-Daughter Communication	.00	-.11
Recent Mother-Daughter Communication	.08	.06
Sex Education in School [e]	.16	.18*
Clinic Attendance [f]	.32	.22*
Daughter's Attitudes		
Birth Control	.25	.34**
Sex Role Norms	.13	.07
Proper Sex Role Behavior	.04	-.06
Sexuality	.08	-.02
Permissiveness	.04	-.02
Daughter's Sexual Characteristics		
Knowledge	.13	-.00
Total Number of Sexual Episodes	.26	.23*
Number of Pregnancy Scares	.04	-.10

Multiple R = .53

*p < .05
**p < .01

See a, b, c, d, e, f, h on Table 7

APPENDIX A. ITEMS IN DREL (DAUGHTER'S ASSESSMENT OF RELATIONSHIP), AND MREL (MOTHER'S ASSESSMENT OF THEIR RELATIONSHIP, WITH FACTOR LOADINGS AFTER VARIMAX ROTATION (N = 449).

DAUGHTER'S ASSESSMENT

Factor Loading	Item Description
.49	My mother doesn't seem to trust me.
.45	I tell my mother only those things I think she can handle without getting upset.
.43	I never know whether my mother really loves me or not.
.51	Often my mother doesn't really know how to talk to me.
.47	Most of the time I never know just what the rules are around here.
.48	In general, I feel awkward talking to my mother about sex and men-women things.
.56	My mother often complains about what I do.
.58	Often I don't really know how to talk to my mother.
.55	My mother wants to control whatever I do.

MOTHER'S ASSESSMENT

.48	My daughter doesn't seem to trust me.
-.44	My daughter and I are very affectionate with each other.
.71	Often I don't really know how to talk to my daughter.
.45	My daughter often complains about what I do.
-.41	I am one person whom my daughter can really talk to about her life.
.57	My daughter hardly ever volunteers any information to me about what's going on in her life.
.74	Often my daughter doesn't really know how to talk to me.
.46	I never know whether my daughter really loves me or not.